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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,040	12/27/2000	Ronen Zohar	42390.P10416	3337

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EXAMINER

NGO, CHUONG D

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 02/10/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/754,040

Applicant(s)

ZOHAR, RONEN

Examiner

Chuong D Ngo

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-11 and 13-21 is/are rejected.
- 7) ☒ Claim(s) 3,4 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1,5,6,8,10-11,14-17,19, and 20 stand rejected under 35 U.S.C. 102(e) as being clearly anticipated by Schmookler (6,178,435).

Schmookler discloses a computing system (figure 3) having a first approximation apparatus (37, see col. 4, lines 20-30) for approximating a term 2^x , a memory (21) for storing a computer program, and a central processing unit (30). The first approximation apparatus (see figure 1) including means (11), corresponding to the claimed rounding apparatus, for generating xI , as the claimed rounded value $X_{integer}$, means (13), corresponding to the claimed shift-left operator, for left shifting (xI) to the exponent bit positions, means (14), corresponding to the claimed second approximation apparatus, accepting xF , as the claimed ΔX , for generating yF as the claimed 2^{yx} , where xF clearly equals to $X - X_{floating\ point}$ as defined by the claims, means (15), corresponding to the claimed integer addition operator, for providing a result y equaling an integer addition of the left shifted xI to the exponent bit positions and yF as claimed.

2. Claims 7,13, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmookler (6,178,435).

It is noted that Schmookler does not disclose the generation of yF as the claimed 2^{yx} by Horner=s method. However, since Horner=s method for approximating 2^{yx} are well known in the art, it would have been obvious design choice to a person of ordinary skill in the art to apply Horner=s method in generating 2^{yx} as claimed.

3. Claims 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmookler (6,178,435) in view of Abe et al. (6,049,343).

It is further noted that Schmookler does not disclose a third approximation apparatus for approximating a term C^Z as claimed. However, Abe et al. discloses in figure 1 the same approximation. It would have been obvious to a person of ordinary skill in the art to apply the teaching of Abe et al. in Schmookler in order generating a power calculation C^Z at high speed.

4. Claims 3,4 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Applicant's arguments filed 12-08-03 have been fully considered but they are not persuasive because in Schmookler, xI is clearly the integer part of the input values or of the complement of the input value, and thus equals to the input value rounded toward minus infinity. Therefore it can be seen as the claimed rounded value $X_{integer}$. Also, in figure 1, the function of block 13 is clearly to shift xI to the exponent bit positions of the output Y , and thus can be seen as the claimed shift-left operator. Further, the fractional part xF in figure 1 clearly satisfy the condition $xF = X - X_{floating\ point}$ as defined by the claims, and thus can be seen as the claimed ΔX . Note: the rejected claims do not required ΔX to be obtained by $X - X_{floating\ point}$ or xI to be converted to floating point format.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D Ngo whose telephone number is (703) 305-9764. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703) 309-9662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chuong D Ngo
Primary Examiner
Art Unit 2124

02-06-2004